

International Application of the control of the con
International Filing Date
Name of receiving Office and "PCT International Application"
Applicant's or agent's file reference

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.	Name of receiving O	ffice and "PCT International Application"
	Applicant's or agent's (if desired) (12 chard	2000.086
Box No. I TITLE OF INVENTION		
METHOD AND SYSTEM FOR SEPARATING A COMPONE	ENT FROM A MULT	I-COMPONENT GAS
Box No. II APPLICANT This person	is also inventor	
Name and address: (Family name followed by given name; for a legal entity, fu The address must include postal code and name of country. The country of the add	ress indicated in this	Telephone No. 713.431.4811
Box is the applicant's State (that is, country) of residence if no State of residence is	inuicuieu veiom)	Facsimile No.
EXXONMOBIL UPSTREAM RESEARCH COMPANY P. O. Box 2189		713.431.4664
Houston, Texas 77252-2189 United States of America		Teleprinter No.
		Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, count	try) of residence:
	d States except tates of America	the United States the States indicated in of America only the Supplemental Box
Box No. III FURTHER APPLICANT(S) AND/OR (FURT	THER) INVENTOR(S)
The address must include postal code and name of country. The country of the add Box is the applicant's State (that is, country) of residence if no State of residence is KELLEY, Bruce T. 5619 Rocky Brook Katy, Texas 77345 United States of America		applicant only applicant and inventor inventor only (If this check-box is marked, do not fill in below.) Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, count	ry) of residence:
This person is applicant all designated all designated for the purposes of: all designated the United St	d States except tates of America	the United States the States indicated in of America only the Supplemental Box
Further applicants and/or (further) inventors are indicated on		
Box No. IV AGENT OR COMMON REPRESENTATIVE	; OR ADDRESS FO	R CORRESPONDENCE
The person identified below is hereby/has been appointed to act or of the applicant(s) before the competent International Authorities		agent common representative
Name and address: (Family name followed by given name; for a legal entity, fu The address must include postal code and name of country.		Telephone No. 713.431.4811
COLLINS, Douglas J. ExxonMobil Upstream Research Company P. O. Box 2189		Facsimile No. 713.431.4664
Houston, Texas 77252-2189 United States of America		Teleprinter No.
		Agent's registration No. with the Office 43,561
Address for correspondence: Mark this check-box where n space above is used instead to indicate a special address to w	no agent or common re which correspondence	presentative is/has been appointed and the should be sent.

					Sheet No 2	_		
Во	k No.	V DESIGNATION OF STATES		N	Aark the applicable check-boxes o	elow	ı: at l	east one must be marked.
The	e follo	wing designations are hereby made un	der	Rule 4	4.9(a):			
Re	gional	l Patent						
X	AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, MZ Mozambique, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZM Zambia, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT (if other kind of protection or treatment desired, specify on dotted line)							
X	EA	Eurasian Patent: AM Armenia, A Moldova, RU Russian Federation, TJ	Z A Ta	zerba jikista	nijan, BY Belarus, KG Kyrgyzs an, TM Turkmenistan, and any ot	tan, her S	KZ State	Kazakhstan, MD Republic of which is a Contracting State of
	European Patent: AT Austria, BE Belgium, BG Bulgaria, CH & LI Switzerland and Liechtenstein, CY Cyprus, CZ Czech Republic, DE Germany, DK Denmark, EE Estonia, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, SI Slovenia, SK Slovakia, TR Turkey, and any other State which is a Contracting State of the European Patent Convention and of the PCT							
		OAPI Patent: BF Burkina Faso, Cameroon, GA Gabon, GN Guinea, GN SN Senegal, TD Chad, TG Togo, an PCT (if other kind of protection or tre	aim	eni ae	sirea, specify on aottea tine	c, C u, M of (CG C IL M DAPI	Congo, CI Côte d'Ivoire, CM ali, MR Mauritania, NE Niger, and a Contracting State of the
Na	tional	Patent (if other kind of protection or					_	
X	ΑE	United Arab Emirates	X	GM	Gambia	\boxtimes	NZ	New Zealand
X	AG	Antigua and Barbuda	\boxtimes	HR	Croatia			
X	ΑL	Albania	\boxtimes	HU	Hungary	. 🛛	PH	Philippines
	AM	Armenia	X	ID	Indonesia	\times	PL	Poland
X	ΑT	Austria			Israel	. 🛛	PT	Portugal
×	ΑU	Australia			India	. 🛛	RO	Romania
_	ΑZ	Azerbaijan			Iceland			Russian Federation
=	BA	Bosnia and Herzegovina	X	JP	Japan			
=	BB	Barbados			Kenya		sc	
=	BG	Bulgaria						
=	BR	Brazil	図	KР	Democratic People's Republic			Sweden
=	BY	Belarus	_		of Korea		-	
=	BZ	Belize	X	KR	Republic of Korea			
_	CA	Canada			Kazakhstan			
		& LI Switzerland and Liechtenstein						Tajikistan
_		China			Sri Lanka			Turkmenistan
X	CN				Liberia			Tunisia
=	CO	Colombia	=					Turkey
	CR	Costa Rica			Lesotho			Trinidad and Tobago
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=	CZ	Czech Republic	_		Luxembourg	101	ma	United Describing & Transmis
	DE	Germany	=		Latvia			United Republic of Tanzania
	DΚ	Denmark	_		Morocco			Ukraine
	DM	Dominica	X	MD	Republic of Moldova			
X		Algeria	_				US	United States of America
X	EC	Ecuador			Madagascar			
X	EE	Estonia	M	MK	The former Yugoslav Republic o			
X	ES	Spain	_		Macedonia			Saint Vincent and the Grenadine
X	FI	Finland			Mongolia			Viet Nam
X	GB	United Kingdom			Malawi			Yugoslavia
X	GD	Grenada	X		Mexico		_	South Africa
X	GE	Georgia	X		Mozambique			Zambia
X	GH	Ghana	X	NO	Norway	X	zw	Zimbabwe
_		1 . 1 . 1		t.	ah harra harama saaba ah a noor	.Δ	ia	oman of this shoot
	Check-boxes below reserved for designating States which have become party to the PCT after issuance of this sheet: NI NICARAGUA SY SYRIAN ARAB REPUBLIC							

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

If, in any of the Boxes, except Boxes Nos VIII(i) to (v) for which a special continuation box is provided, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No...." (indicate the number of the Box) and furnish the WILSON, Pamela L.; WOLFS, Denise Y. information in the same manner as required according to the captions of the Box in which the space was insufficient, in EXXONMOBIL UPSTREAM RESEARCH COMPANY particular:

if more than two persons are to be indicated as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;

(ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;

(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. II and No. III" (as the case may be), indicate the name of the inventor(s) and part to (acch) such name the State(s) of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;

(iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV and indicate for each further agent the same type of information as required in Box No. IV;

(v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;

(vi) if, in Box No. VI, there are more than five earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.

2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation for the statement of th statement" and indicate the name or two-letter code of each State so excluded.

HOEFLING, Marcy M.; KATZ, Gary P.; LAWSON, Gary D.; PLUMMER, J. Paul; SMITH, Charles E.; WARNER, Darrell E.;

P. O. Box 2189 Houston, Texas 77252-2189 **United States of America**

	_/· \	Medi ito:		
Box No. VI PRIORIT	Y CEAIM			
The priority of the following	g ea. application(s) is hereb	y claimed:		
Filing date	Number of earlier application	,	Where earlier application	ı is:
of earlier application (day/month/year)	07 333 107	national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 25 September, 2002 (25/09/02)	60/413,350	US		
item (2)				
item (3)				
item (4)				
item (5)				
Further priority claims	are indicated in the Supplement	ntal Box.		
The receiving Office is req (only if the earlier applicat Office) identified above as:	uested to prepare and transmi tion was filed with the Office	t to the International Bur which for the purposes	reau a certified copy of of this international ap	the earlier application(s) plication is the receiving
all items item	(1) item (2)	item (3) item (4)	item (5)	other, see Supplemental Box
* Where the earlier application Industrial Property or one Men	on is an ARIPO application, indi aber of the World Trade Organization	cate at least one country po tion for which that earlier ap	arty to the Paris Convent plication was filed (Rule 4.	ion for the Protection of 10(b)(ii)):
				• • • • • • • • • • • • • • • • • • • •
Choice of International S	earching Authority (ISA) (i)	two or more International	Searching Authorities are	competent to carry out the
international search, indicate th	he Authority chosen; the two-letter	r code may be used):		
	earlier search; reference to	that search (if an earlier	search has been carried o	out by or requested from the
International Searching Author Date (day/month/year)	Number	Country (or reg	ional Office)	
Box No. VIII DECLARA	ATIONS			
The following declarations check-boxes below and indic	are contained in Boxes Nos. cate in the right column the nu	VIII (i) to (v) (mark the a mber of each type of decla	applicable aration):	Number of declarations
Box No. VIII (i)	Declaration as to the identit	y of the inventor		:
Box No. VIII (ii)	Declaration as to the applicate, to apply for and be gra		international filing	: 1
Box No. VIII (iii)	Declaration as to the applicate, to claim the priority of		international filing	: 2
Box No. VIII (iv)	Declaration of inventorship United States of America)	(only for the purposes of	the designation of the	: 1
Box No. VIII (v)	Declaration as to non-prejud	dicial disclosures or excen	tions to lack of novelty	:

The declaration must conform the standardized wording provided for in Section 212, to otes to B (in general) and the specific Notes to Box No. VIII (ii). If this Box is not used, this sheet should not be	oxes Nos. VIII, VIII (i) to (v) included in the request.
Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be grant 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate:	ted a patent (Rules 4.17(ii) and
In relation to this International Application	
EXXONMOBIL UPSTREAM RESEARCH COMPANY is entitled to apply for and be grante following:	ed a patent by virtue of the
an Assignment from KELLEY, Bruce T. to EXXONMOBIL UPSTREAM RESEARCH COI 2002 (10.10.02).	MPANY dated 10 October
This declaration is made for the purposes of all designations, except the designations of the	United States of America.
	·
	•
This declaration is continued on the following sheet, "Continuation of Box No. VIII (ii)".	
Form PCT/RO/101 (declaration sheet (ii)) (March 2001; reprint January 2003) LegalStar 2003, Form PCTREQ	See Notes to the request form

Sheet No.6...

Box No. VIII (iii) DECLARATION: ENTITLEMENT TO CLAIM PRIORITY
The declaration must conform is standardized wording provided for in Section 213; standardized wording provided for in Section 213; standardized wording provided for in Section 213; standardizes to Boxes Nos. VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet should not be included in the request.
Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)):
In relation to this International Application
EXXONMOBIL UPSTREAM RESEARCH COMPANY is entitled to claim priority of earlier Application
No. 60/413,350 filed 25 September 2002 (25.09.02)
by virtue of the following:
an Assignment from KELLEY, Bruce T. to EXXONMOBIL UPSTREAM RESEARCH COMPANY dated 10 October 2002 (10.10.02).
This declaration is made for the purposes of all designations, except the designations of the United States of America.
This declaration is continued on the following sheet. "Continuation of Box No. VIII (iii)".

Sheet No.7...

Box No. VIII (iii) DECLAR CON: ENTITLEMENT TO CLAIM PRIORITY
The declaration must conform to the standardized wording provided for in Section 213; second es to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet sheald not be included in the request.
Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)):
In relation to this International Application
KELLEY, Bruce T. is entitled to claim priority of earlier Application
No. 60/413,350 filed 25 September 2002 (25.09.02)
by virtue of the following:
the applicant is the inventor of the subject matter from which protection was sought by way of the earlier application.
This declaration is made for the purposes of the following designations for national and/or regional patents: US.
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CH CH CALL COLOR OF THE VIII (COM
This declaration is continued on the following sheet, "Continuation of Box No. VIII (iii)".

Sheet No. . . 8. . . .

Box No. VIII (iv) The declaration must conform to the and the specific Notes to Box No. VIII (w). If this Box is not used, this sheet should not be included in the equest.

: INVENTORSHIP (only for the purposes of the designation of the United States of America) ng standardized wording provided for in Section 214; see

to Boxes Nos. VIII (i) to (v) (in general

Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))

for the purposes of the designation of the	
I hereby declare that I believe I am the original, first and sole (if only inventor is listed below) inventor of the subject matter which is claimed an	d to: Which a parent is so again
This declaration is directed to the international application of which it form	
This declaration is directed to international application No. PCT/ to Rule 26ter).	(if furnishing declaration pursuant
I hereby declare that my residence, mailing address, and citizenship are as	stated next to my name.
I hereby state that I have reviewed and understand the contents of the claims of said application. I have identified in the request of said appliforeign priority, and I have identified below, under the heading "Prior Apthe World Trade Organization, day, month and year of filing, any application other than the United States of America, including any PCT international United States of America, having a filing date before that of the application	applications," by application number, country or Member of a patent or inventor's certificate filed in a country application designating at least one country other than the on on which foreign priority is claimed.
Prior Applications:	
I hereby acknowledge the duty to disclose information that is known by §1.56, including for continuation-in-part applications, material information application and the PCT international filing date of the continuation	-in-part application.
I hereby declare that all statements made herein of my own knowledge belief are believed to be true; and further that these statements were made like so made are punishable by fine or imprisonment, or both, under Se such willful false statements may jeopardize the validity of the application	ection 1001 of Title 18 of the United States Code and that
Name: KELLEY, Bruce T. Residence: Kingwood, Texas. (city and either US state, if applicable, or country) Mailing Address: 5619 Rocky Brook Kingwood, Texas, 77345	
Citizenship: United States of America Inventor's Signature: Duct T. Kalandarian (if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	Date: 30 June 2003 (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)
Name:	
Residence:	
Mailing Address:	
Walling Address:	
Citizenship: Inventor's Signature: (if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	Date: (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)
This declaration is continued on the following sheet, "Continuation	n of Box No. VIII (iv)".

	<u> </u>	Sheet No 9	
Box No. IX CHECK LIST;	NGUAGE O	F FILING	
This international application cor (a) in paper form, the following		This international application is accounted by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
sheets:		1. A fee calculation sheet	: 1
request (including declaration sheets)	: 9	2. original separate power of attorney	: 1
description (excluding		3. original general power of attorney	:
sequence listings and/or tables related thereto)	: 12	4. copy of general power of attorney; reference number,	_
claims	: 2	if any:	•
abstract	: 1	6. priority document(s) identified in Box No. VI as	•
drawings	· 	item(s):	:
Sub-total number of sheets	: 27	7. translation of international application into (language):	:
sequence listings tables related thereto	:	8 separate indications concerning deposited microorganism	
(for both, actual number of	•	or other biological material 9 sequence listings in computer readable form	:
sheets if filed in paper form, whether or not also filed in		(indicate type and number of carriers)	
computer readable form; see		(i) copy submitted for the purposes of international search	l 1
(c) below) Total number of sheets	:	under Rule 13ter only (and not as part of the internatio application)	nai :
(b) only in computer readal (Section 801(a)(i))	•	(ii) (iii) (
(i) sequence listings		Rule (3ter	:
(ii) ☐ tables related thereto (c) ☐ also in computer readab	le form	(iii) together with relevant statement as to the identity of the copy or copies with the sequence listings mentioned in	left .
(Section 80 f(a)(ii))		10. tables in computer readable form related to sequence listing	ngs
(i) sequence listings		(indicate type and number of carriers)	
(ii) ☐ tables related thereto Type and number of carries CD-ROM, CD-R or other) on	rs (diskette, which are	(i) copy submitted for the purposes of international search Section 802(b-quater) only (and not as part of the international application)	under
contained the		1	·
sequence listings:		 (ii) (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, copy for the purposes of international search under Sec 802(b-quater) 	the ction
(additional copies to be indic items 9(ii) and/or 10(ii), in ri	ated under ght column)	(iii) together with relevant statement as to the identity of the or copies with the tables mentioned in left column	e copy :
		11. other (specify): Return receipt postcard	: 1
Figure of the drawings which should accompany the abstract:	1	Language of filing of the international application: ENGLISH	
Box No. X SIGNATURE OF	APPLICANT,	AGENT OR COMMON REPRESENTATIVE and the capacity in which the person signs (if such capacity in which the person signs (if such capacity is not obvious from reading	the request)
Next to each signature, indicate the name	of the person signing of	and the capacity in which the person signs (ij such capacity is not obvious from reading	the request).
		//2/12	
	aglas J. COLLI	NS Date	
~	oughes of source	7 - 4	
Date of actual receipt of the international application:	purported	For receiving Office use only	2. Drawings:
3. Corrected date of actual rec	eint due to later l	nut	received:
timely received papers or de purported international app	rawings completi	ng the	_
Date of timely receipt of the corrections under PCT Artic	e required cle 11(2):		not received:
5. International Searching Aut (if two or more are compete		6. Transmittal of search copy delayed until search fee is paid	
		For International Bureau use only	
Date of receipt of the record co by the International Bureau:	рру		

m·l.	et is not period of and does not count as a si	sheet of the internation plication.	
Inis snee	et is not post of and does not comment to	For For Office use only	
FEE CALCU	ULATION SHEET	International Application No.	
	to the Request	International Apparent	
Applicant's or agent's	2000.063	Date stamp of the receiving Office	
file reference			
Applicant EXXONMOBIL UPSTREA	AM RESEARCH COMPANY		
CALCULATION OF PRES	CRIBED FEES		1
1. TRANSMITTAL FEE .		240.00 T	
2. SEARCH FEE International search to be	carried out by EP	700.00 S	
	l Searching Authorities are competent to carr the Authority which is chosen to carry out the	ry out the international : international search.)	
3. INTERNATIONAL FEE Basic Fee	·		
Where item (b) and/or (c)	of Box No. IX apply, enter Sub-total nu	umber of sheets 27	ı
Where item (b) and (c) of	f Box No. IX do not apply, enter Total nu	umber of sheets	•
b1 5 . 20 . 1		476.00 b1	
first 30 sheets .	12.00 =	0.00 b2	
number of sheets	fee per sheet		Ì
b3 additional compone	nt (only if sequence listings and/or tables computer readable form under Section 801 d on paper, under Section 801(a)(ii)):	related 1(a)(i), or	
400	_ 1	b3	
	fee per sheet	470.00	1
Add amounts entered at b	b1, b2 and b3 and enter total at B · · · L	476.00 B	
Designation Fees The international applica	ation contains 120 designations.	520.00	
number of designation fe payable (maximum 5)	_ X		
	B and D and enter total at I	996.00 I	
	States are entitled to a reduction of 75% he applicant is (or all applicants are) so entitle	of the tled, the	
1		20.00 P	
4. FEE FOR PRIORITY D	OCUMENT (if applicable)	1,956.00	
5. TOTAL FEES PAYABI	LE		
Add amounts entered at	T, S, I and P, and enter total in the TOTA	AL box TOTAL	i
The designation fees	are not paid at this time.		
MODE OF PAYMENT			
authorization to charg deposit account (see b	pelow)	cash coupons revenue stamps other (specify):	
cheque	bank draft		
AUTHORIZATION TO (This mode of payment ma	CHARGE (OR CREDIT) DEPOSIT Act of the state of the control of the	Receiving Office: RO/US	

(This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above. X Douglas J. COLLINS Name: Signature: Authorization to charge the fee for priority document.

Form PCT/RO/101 (Annex) (January 2003)

Authorization to charge the total fees indicated above.

LegalStar 2003, Form PCTREQ

05-1328

June 30, 2003

Deposit Account No.:

Date: